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## Student's Challenges in Access to Digital Resources in Higher Education Institutes of Pakistan

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# Student's Challenges in Access to Digital Resources in Higher Education Institutes of Pakistan

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## **Abstract**

### **Purpose-**

Consider that some high-quality learning processes in higher education are impossible without the use of technology, particularly considering its impact on the development of abilities & skills for the 21st-century. Shifting from a paper resource to a digital format enables users with a variety of access and usage options. Still, at the same time, some other challenges emerged which include the quality, cost, life, validity and credibility of digital contents. This research work is a detailed description of the challenges/ problems confronting by the researchers while accessing digital information resources.

**Methodology-** This study designed a quantitative research method by using a convenience sampling technique. An adapted questionnaire was used for data collection. Data were collected from the two hundred and eleven postgraduate students from the public and private universities, those charted from the HEC and available at the HEC digital library website.

**Findings-** The results of this research study established a variety of issues and challenges that users faced while accessing online library databases and other digital resources like restricted access to digital resources, a lack of user knowledge, unreliability of information, ineffective database layouts, information management, poor internet download speeds, and data security.

**Originality/value:** This research has provided a major contribution to identification, understanding of the challenges while using and accessing of library online digital

resources by researchers of Pakistan higher education institutes. The management of academic institutions can learn from the findings and recommendations.

**Keywords-** Challenges; Electronic library resources; Online library databases; Digital libraries – Pakistan, Academic libraries, digital resources access, ER usage

## **Introduction**

Information and communication technologies (ICTs) impact every aspect of life, including the country's educational system. ICT has become one of the fundamental building block of modern society in a short period (Arif & Kanwal, 2009). Information technology brought a profound change in every field of life, including library resources and services. This paradigm shift has impacted on availability and accessibility of resources in digital format (Oswal, 2014). Information preservation, access, and retrieval are changed significantly as a result of this revolution.

As a result of these developments, university students are becoming more interested in digital learning opportunities rather than paper learning tools (Egberongbez, 2011; Ani & Ahiauzu, 2008). To look at it another way, the paper era is paving the way for the digital world. In fact, the higher education institutions in both developing and developed countries agree that e-resources facilitate training, learning, and academic practice significantly (Alphonse & Mwantimwa, 2019). There are various types of electronic resources like electronic journals, electronic books, online databases that are available in different formats like adobe acrobat documents (PDF), web page (HTML) etc., which can be accessed from a single gateway (Chandel & Saikia, 2012). The digital information resources are easier to access, cost-saving and time-saving with less human efforts. Publishers are increasing digital information resources in terms of variety and quality every year (Rumble, 2017).

This remarkable growth of digital resources has brought a significant change in terms of information management, storage, retrieval and access. Due to this change, the maximum universities libraries services and resources are shifting from print to digital resources (Alphonse & Mwantimwa, 2019). Today, most researchers and academicians have become dependent on web-based resources because technology is available at their doorsteps with a variety of formats (Chandel & Saikia, 2012). Despite all advantages of digital resources, there are a few problems and issues that are similarly existing and increasing enormously. Oswal, Sushil K. (2014) highlighted the few major challenges that

user face like rights restriction to users, accessibility & usability of digital resources, accessibility to library databases from their homes, research work archival restricted access to users, searching skills over databases pages, particular issues with PDF files, restrictions on ebooks collection access, less technological infrastructure. According to Okello-Obura (2010), there are few issues/ factors from the user's side like attitude towards digital resources, user's personal skills to use digital resources etc.

In order to get the required information, overall challenges faced by the researchers are divided into two categories. First are direct challenges which are consisting of the operationalized factors that users face while using online databases (Wattanapisit et al., 2020). This category was based on factors like power failure, lack of digital/ online resources from the library, users who don't have enough skills to operate the databases for retrieval of the required information and limited access to online library databases provided by the institute library (Orsu, 2017).

The second category of challenges are based on indirect factors, like support from the library staff in information retrieval. The indirect factors like teacher support, librarian support, colleagues, and friends help get information resources (Ramis Ferrer et al., 2021). A few important characteristics are also included in indirect factors like age, gender, specialization, information communication literacy, ownership of ICT tools like laptop or computer, and availability of internet access at home (Orsu, 2017). As a result, it is important to determine e-resource use as well as issues/challenges faced while using e-resources. In Pakistan, there have been very few attempts to examine the widespread use of e-resources by research scholars, as well as the effects of e-services and their activity. As a result, it's crucial to figure out how to use e-resources as well as the issues/challenges that arise when doing so (Wattanapisit et al., 2020). The main objective of this study is to identify the challenges that researchers faced while accessing online digital information resources. The researcher will also evaluate the challenges that faced by researchers in public and private sector universities, respectively. Finally, the researchers will also find out the impact of these challenges on gender.

### **Literature Review**

There are numerous benefits of electronic information resources; timely access to resources, collection, organization and evaluation of information resources is easy as

compared to print resources. That is why academicians are preferred to use digital resources to fulfil their academic and research need (Soni et al., 2018). Despite the good advantages of electronic information resources, the researchers/ students are still confronting issues while accessing and using digital resources (Orsu, 2017). Several research studies investigated the challenge of users with online information resources (Sohail and Ahmad, 2017; Daramola, 2016; Omeluzor, Akibu and Akinwoye, 2016; Omeluzor, 2015).

The following challenges are considered as primary;

### **Marketing problem**

According to HBR, the marketing term was used for the first time in history in 1960 by Theodore Levitt in Harvard Business Review. We need to understand the user's satisfaction level through the product and its services (Suprayogi, 2017). The fundamental component is "marketing strategy," what a product is and how we can plan according to item packages. It is a big challenge to find out the best practices and ways to work with researchers and users (Wolpert, 1998). Organized marketing, planning for library resources and services, an academic librarian needs to include all practising techniques according to institutional interest. The educational institution needs to pay attention to its financial matters to spend on promotional/ marketing activities (Empey & Black, 2005). Many researchers identified marketing social media tools like Wiki, Twitter, Facebook, Instagram, WhatsApp, Email, Chat Online, LinkedIn, Blogs, Instant Messaging, Quick Response Codes, Podcast and Social Book Marketing (Fagbemi & Babarinde, 2019). Marketing is a fundamental factor that increases online library databases' usage (Roy et al., 2017).

### **Poor interface of databases.**

The database interface gives an idea of why the user-chosen and using the respective online library database (Petrov et al., 2020). In the current automated environment, the information systems consist of three significant modules 1- Network for the computer system 2- Information contents 3- Interface for user's attractions. One thing that is always being considered while developing an online database or information system, the layout/ interface of the database. Any database/ information retrieval system interface is the first and pivotal point that interacts with people/ users (Laranjeiro et al., 2017). An excellent

interface of an online library database makes able users get their required information easily. The following types of online databases interfaces;

1- command-based interfaces graphics-based 2- Form-based interfaces 3- Option-based interfaces 4- Visuals-centered interfaces 5-Normal linguistic interfaces.

In this era (technological information age), many users are still not well aware of how to use technology (Mabuni, 2017). Users need a mobile interface of online databases consisting of graphical information, menus / tabs, and natural/normal language (Mabuni, 2017).

### **Unreliability, accuracy, and durability of digital resources.**

The researchers have serious concerns about the credibility of massive digital resources while searching for required information from the search engine due to irrelevant results retrieved from the information resources (Tworek, 2018). The life of electronic resources is also a big issue due to less durability and availability as compared to print resources. The print form of journals and books are preserved in the libraries for a longer time. Still, due to the dynamic situation of technology day by day, the preserving mediums are going to change like PDF format publications. This is also an alarming situation because, with technology advancements, the information resources formatting can be changed in the future (Fisher et al., 2016).

### **Cost, lack of ICT tools & non-supportive internet speed**

Information communication technology (ICT) needs more financial support for continuing resources and services. Maximum libraries are confronting a lack of funds for the subscription of electronic resources/ databases, which is why library users do not get their required information on time (Ghavifekr et al., 2016). Due to the high price of electronic resources, users prefer to use print resources (Kiamnati, 2015). Another research study was found at the University of Namibia's Northern Campus (2010), that highlighted the major issues like computer system shortage, lack of online databases usage skills, insufficient internet speed, lack of knowledge about online resources links, lack of finance allotment by the institutions for acquiring/ subscription of online resources, user's training and lack of literacy as all these issues are also barriers between resources and users (Madondo et al., 2017). A research survey conducted (2005) and found that 33% of users did not have sufficient computers, laptops, and other similar devices. There are 28% of users were

unaware of how to retrieve and where to retrieve the required information and 16% of users believed that electronic database usage was only time wastage (Orsu, 2017). According to the research conducted at the Africa University Library (2017), the respondents highlighted the barriers while getting access to online databases and other digital resources. Overall, 70% of respondents gave feedback about slower internet speed, and 15% do not have enough workstations for work (Madondo et al., 2017).

### **Copyright issues & privacy issues**

According to Clark & Westin (1968)" the right to select what personal information about me is known to what people." It is a significant challenge of privacy-awareness management at an individual and institutional level (Jadliwala et al., 2013). It indeed needs to pay attention to electronic/ digital information resources pay about legal issues like licensing in case of subscription of online library databases, e-journals, e-newspaper etc. Many types of subscriptions and licensing conditions are available for fair usage and protection & prevention from copyright violation (Paithankar, 2018). Plagiarism and piracy is an essential subject in the current age. The database security issues and privacy issues of any network system can be overcome through the personal login password (Ghavifekr et al., 2016).

### **Lack of users training and awareness**

The online system always required training of users to enhance the searching abilities (Tariq, 2016). These services' core objective is to train users to get the required information from the available databases effectively and efficiently. In Nigeria, many libraries are not only providing training to their parent organizations but also offering research learning courses (Jadliwala et al., 2013). Due to lack of library digital resources training and expertise, electronic resources' implementation is becoming more challenging every day (Ghavifekr et al., 2016).

### **Objectives of the study**

This study investigates the challenges of online digital library databases among researchers (post-graduates) of the public and private Lahore based universities. The study also highlights the major challenges/ problems they confronted in getting access and use of digital information resources to fulfill their needs of the research work.

To achieve the objectives of this research study, the following research questions are framed:

1. What kind of challenges faced by male researchers that differ from the female researchers while accessing online digital information resources?
2. What are the major and different challenges faced by public and private institutes researchers?

### **Research Methodology**

This research study adopted a quantitative research methodology approach through using a designed survey,. An adapted questionnaire was used as a data collection tool. The convenience sampling technique/ method (non-probability) was applied. This technique/ approach has supported the scope of this research study and helped in achieving the objectives. The questionnaire was adapted (Chan, 2009) after the in-depth review of relevant studies. This adapted questionnaire was used to gather responses on e-resources, services, knowledge, use, and challenges that users faced while getting access to online library digital information resources. The questionnaire was shared (print and digital) in many groups and sent an email to a large number of the relevant population. The overall response rate received was 211/300 (70%). This research population was consisted of postgraduate (MS, MPhil, PhD, Postdoc) researchers of public and private universities. The information about the number of postgraduate students was obtained from various sources included librarians, admission office staff and universities' websites. The QS World Ranked website was also consulted and got information about institutes as well as enrolled students (QS World University Rankings, 2020). There are more than 100 M. Phil programs, and about 50 PhDs in selected universities (HEC Chartered, Punjab and Lahore based only). The universities were selected on the basis of the categorization posted by



Higher Education Commission (HEC<sup>1</sup>), i.e. general category as well as public and private sectors. Moreover, the sample is drawn from HEC chartered universities based in Lahore, Pakistan.

### Research Findings

The overall response rate was 70%, and the female is respondent ratio was high 116 (55%), and male respondent was 95(45%). The public sector response ratio is 124 (58.8%), and private sector respondents response rate 29(13.7%).

### Challenge List & Ranking

The researcher developed a list of the most prominent challenges that can be faced by any user/ researcher while getting access and using online library databases. Based on data/ responses received by the participants of the survey, all significant challenges ranked on the basis of responses. (Table 3)

Table 3 *Challenges while using online library databases*

Challenges	Mean	SD
IUT and fewer facilities	3.51	0.98
The cost of OLD a significant issue	3.35	1.12
Security on information while using OLD	3.31	1.04
Limited access to the archive IR	3.31	0.98
Slow downloading speed	3.25	1.20
Inability to AOLD from home	3.22	1.01
The privacy of information from the OD	3.20	0.99
Availability to the fewer OLD	3.19	1.11
Organization of IR	3.16	1.00
Poor UI design of OL	3.11	0.98
Less awareness of the user about OD	3.12	1.34
University's OLD unapproachable	3.02	1.19
Unreliable IR	3.01	1.05

Scale Used: 1 = SD, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = SA \*SD = Standard Deviation

**Diversity of challenges is the use of online digital resources.**

<sup>1</sup> <http://www.digitallibrary.edu.pk/institutes.php>

The information of gender showed challenges that they have faced in details. The results of challenges for users with respect to gender are showed in Table 4. The study's findings showed that there is no significant difference in challenges between male and female postgraduate researchers. It is also concluded that the students (gender-wise) have had almost the same challenges in getting access to online library databases. The male users' data predicting that they have had big challenge was limited access to resources 95 (Mean 3.43) and female user have had information security was a big challenge for them 116 (Mean 3.34). (Table 4)

Table 4 *Results for challenges for users with respect to gender*

Statements	Male		Female	
	Mean	SD	Mean	SD
Online databases unapproachable	3.09	1.24	2.96	1.15
Privacy of information	3.21	1.01	3.19	.98
Cost of online databases	3.40	1.11	3.31	1.13
User interface	3.03	1.03	3.15	.94
Unreliable information	3.01	1.03	3.00	1.07
Security of information	3.27	1.01	3.34	1.06
Limited access to the archive IR	3.43	.95	3.21	.99
Slow downloading speed	3.30	1.20	3.21	1.21
Inability online databases from home	3.27	1.00	3.18	1.02
Less awareness	3.23	1.25	2.99	1.41
Fewer online databases	3.24	1.07	3.15	1.15

Scale Used: 1 = SD, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = SA \*SD = Standard Deviation

The results for challenges faced by users of public and private universities are shown in Table 5. There exists a little difference between public and private university user's challenges associated with online library databases. The public sector university's researchers have more challenges as compare to private sector institutes. (Table 5)

Table 5 *Results for challenges with respect to university types.*

Statements	Public		Private	
	Mean	SD	Mean	SD
Online databases unapproachable	2.41	.99	3.41	1.42

Privacy of information	2.93	.78	3.17	1.18
Cost of online databases	3.06	.88	3.46	1.32
User interface	3.40	.93	2.77	.91
Unreliable information	3.50	.86	2.72	1.05
Security of information	3.61	.86	3.03	1.18
Limited access to the archive IR	3.21	.81	3.32	.99
Slow downloading speed	3.18	.80	3.51	1.42
Inability online databases from home	3.24	.81	3.15	1.10
Less awareness	3.20	1.40	3.62	1.30
Fewer online databases	2.75	1.11	3.29	1.24

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*Scale Used:* 1 = SD, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = SA \*SD = Standard Deviation

## Discussion

Demographic variables like gender, age etc., always play an important role while using and accessing online digital resources (Tolulope, 2017). Several research studies results found that gender is always considered a significant predictor of web-based resources accesses and use. Male users use the internet for enjoyment, and female users use it purposely (Ford et al., 2001). But few other studies (Mensah, I. 2016; Chan 2009) have proved that the female users are perceived for greater ease of use as compared to male researchers. Internet usage skills reduce challenges while using online library databases and other digital resources. But few previous research studies (Hong Sinh & Thi Hong Nhung, 2012; Benyon, 1998; Moore, 2016) rejected this hypothesis that the only skilled users are using online library databases effectively.

It is observed that private sector institute users have low challenges as compared to public sector institute users, as data depicting that they also have better familiarities with the available digital resources. The study shows that the users from public sector institutes have limited access to resources, don't have better internet speed, and less awareness about digital resources. The majority of public sectors institutes have few online databases and other digital information resources. The research study (Mirza, M. S., & Mahmood, K. 2012), results of sector-wise universities, the public sector universities researchers found happier with OLD. However, there are many research studies (Zhang, L., et al. 2014; Dyck, J. L., & Smither, 1994; Keller, C., et al. 2007) on technology acceptance has revealed mixed results. The users have faced many other challenges like the high cost of information

resources, slow internet speed, information security, unreliable information resources, etc. Those researchers who have limited access to internet-based information resources may not do well in their research areas. These results/findings are in agreement already mentioned and disuccessed in previous research work (Annuobi 2005; Enakrire & Onynania 2007; Dadzie 2005; Ray & day 1998).

The few findings of this research study depicting as challenges;

- The gender-wise highest challenges faced were user's training and fewer facilities provided by the university libraries.
- The cost was observed as a major challenge
- Institutional-type challenges in public sector universities users have information security threat and awareness issue.

### **Conclusion**

There are a variety of challenges at every stage like digital resources selection, management, maintenance and access provision to users. The institutes, especially libraries, can play a vital role to improve the qualities of resources and services that can reduce the challenges. Users were unable to satisfy information needs from the Internet and university libraries due to insufficient connections to the digital library. Restricted access has a negative impact on respondents' understanding of technical advances in their respective fields of research. Users also recommended that IT-savvy librarians be hired, as well as full text access to research material that have already been available in different research databasees. Library staff need to promote available information resources and services through proper marketing, positive services provisions etc.

### **Implications**

The results of this research study will help out teachers, students and institutional administration. The faculty can get a better idea of how to teach and lead researchers from the available resources and services proved by the university libraries. Similarly, the management will be in an acceptable position to make decisions about what kind of resources will be suitable and desired for researchers. University researchers will also in a better position to identify the required resources from their institutional libraries.

### **Limitations**

Every research study may have few limitations for the collection of data, analysis of data, responses from the participants, methodology, and instrument, etc. The data for this research study has been collected from the selected/ limited universities as per the criteria mentioned above, so this data cannot be representative of all public and private universities.

**Recommendations**

1. The university libraries should pay more significant consideration to enhance the technological resources and services
2. The public universities should also arrange information resources, as private institutes are providing a leading online resource to their students/ researchers.
3. Libraries should arrange clear, concise attractive and approachable digital resources so that users can get access from anywhere. Need to enhance the literacy of technological resources.
4. Distance creates hurdles in getting access to OLD, but universities need to acquire maximum databases and manage access from a virtual private network (VPN).

## Appendix

### Student's Challenges in Access to Digital Resources in Higher Education Institutes of Pakistan

#### **Section A: Demographics: Please tick the appropriate option.**

- A1- Gender ☐ Male ☐ Female
- A2- Age ☐ 34 years or below ☐ 34-54 years ☐ 55 or above
- A3- University Name: -----
- A4- University Type: ☐ Public ☐ Private
- A4- Type of program: ☐ Full time ☐ Part time ☐ Weekend
- A5- Level of program: ☐ Course work ☐ Research work
- A6- Faculty Name; -----

#### **Section-B:**

##### **B1: Accessibility to online library databases: Please tick the appropriate option.**

Statements	Yes	No	I don't know
Do you have access to the library's online databases from home			
Are library online databases accessible without any hurdle?			
Availability of online chat service			
Availability of user guide/ tutorial			
Availability of telephonic help services			
The library helps through email services in getting access to library online databases			

##### **B2: Learning ways to online library databases. Please tick multiple options**

###### **B2-I** How did you learn to use online library databases:

- ☐ Orientation
 ☐ Library Promotion
 ☐ Self-Learning
 ☐ Training
- ☐ programs like workshop, seminars, conference etc.
 ☐ Media
 ☐ Any other-----
- 

###### **B2-II** How often do you use the online databases?

<input type="radio"/> Rarely	<input type="radio"/> Sometimes (1 to 2 times a month)	<input type="radio"/> Frequently (Once a week)	<input type="radio"/> Always (Almost Daily)	<input type="radio"/> Never used
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## Section C

<b>Challenges for users while using and accessing online library databases</b>		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	University online library databases are somewhat unapproachable to me.					
2	Organization of information resources					
3	The privacy of information from the online databases					
4	The cost of online library databases is a major issue					
5	Poor user's interface design of online databases					
6	Unreliable information resources					
7	Security on information while using online library databases					
8	limited access to the archive information resources					
9	Slow downloading speed					
10	Inability access online library databases from home					
11	Less awareness of the user about an online database					
12	Availability to the fewer online library databases					
13	Inadequate user training and fewer facilities					

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